

**Defense Information Infrastructure (DII)
Common Operating Environment (COE)**

Version 3.0/B

**Version Description Document for the Developer's Toolkit
(IRIX 6.2)**

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NOTE: Courier font is used to indicate entries to be typed at the keyboard, operating system commands, file and directory names, and screen text. For example:

The file is located in the `DII_DEV` directory.

1. System Overview

Defense Information Infrastructure (DII) Common Operating Environment (COE) developer's tools aid the developer in the creation and ultimate installation of DII COE segments. The tools make software integration a largely automated process, thus significantly reducing development time while automatically allowing detection of potential integration and runtime problem areas.

This delivery consists of (1) 10 developer tools (`CalcSpace`, `CanInstall`, `ConvertSeg`, `MakeAttribs`, `MakeInstall`, `TestInstall`, `TestRemove`, `TimeStamp`, `VerifySeg`, and `VerUpdate`); (2) a setup script called `MakeTOOLSEnv`; (3) a data file called `TapeSizes` that contains a list of known tape devices; and (4) an Application Programmer Interface (API) `examples` directory and `include` and `libs` directories. The developer's toolkit is delivered separate from the DII COE Kernel tape. By default, the developer's toolkit is located under the `DII_DEV` directory. The actual location of the developer's toolkit may vary from system to system because it is installed via a `tar` command. For example, if the toolkit is tarred to `/h`, the path would be `/h/DII_DEV`.

Developer's Tools

The 10 developer's tools can be run from the command line, and some can be run from other code using published APIs. The following developer's tools are included in the DII COE Version 3.0/B delivery. The *DII COE Integration and Runtime Specification*, the *DII COE Programming Guide (IRIX 6.2)*, and the *DII COE API Reference Guide (IRIX 6.2)* describe these tools and their functionality in more detail.

- **CalcSpace** Version 1.0.0.4—Computes the space required for the segment specified and updates the hardware descriptor.
- **CanInstall** Version 1.0.0.6—Tests a segment to see if it can be installed, which means that all required segments must already be on the disk and the disk cannot have any conflicting segments.
- **ConvertSeg** Version 1.0.0.7—Examines a segment's segment descriptors and converts them to the *DII COE Integration and Runtime Specification* segment format.
- **MakeAttribs** Version 1.0.0.7—Creates the descriptor file `FileAttribs`, which recursively traverses every subdirectory beneath the segment home directory and creates a file with lines in the proper format.
- **MakeInstall** Version 1.0.1.5—Writes one or more segments to an installation medium or packages the segments for distribution over the network.

- **TestInstall** Version 1.0.0.7—Installs a segment (temporarily) that already resides on disk.
- **TestRemove** Version 1.0.0.6—Removes a segment that was installed by TestInstall.
- **TimeStamp** Version 1.0.0.6—Puts the current time and date into the `VERSION` descriptor of the specified segment.
- **VerifySeg** Version 1.0.0.7—Validates that a segment conforms to the rules for defining a segment.
- **VerUpdate** Version 1.0.1.5—Increments the segment version number and updates the date and time in the `VERSION` descriptor of the specified segment.

MakeTOOLSEnv Setup Script

The `MakeTOOLSEnv` setup script is located in the `DII_DEV/Scripts` directory. The setup script defines the environment variables required for developer's tools processing. This script should be sourced before running the developer's tools.

TapeSizes Data File

The `TapeSizes` data file is located in the `DII_DEV/data` directory. The data file contains a list of known tape devices. This file is used as a convenience feature with the `MakeInstall` tool.

NOTE: The environment variable `TOOLS_DATA` must be set and pointing to `DII_DEV/data` to allow `MakeInstall` to access this file.

examples Directory

The `examples` directory contains a list of example C programming files, which show developers how to use the public APIs. The required public `include` files are also shown. Examples are located in the `DII_DEV/examples` directory.

include Directory

Public `include` files are used to compile with the public APIs. Public `include` files are located in the `DII_DEV/include` directory.

libs Directory

Public API libraries are located in the `DII_DEV/libs` directory.

2. Referenced Documents

The following documents are referenced in this Version Description Document (VDD):

- *Defense Information Infrastructure (DII) Common Operating Environment (COE) Integration and Runtime Specification* Version 2.0, DII COE I&RTS:Rev 2.0, Inter-National Research Institute (INRI), October 23, 1995
- *Defense Information Infrastructure (DII) Common Operating Environment (COE) Version 3.0/B Programming Guide (IRIX 6.2)*, DII.30B.IRIX62.PG-1, Inter-National Research Institute (INRI), May 8, 1997
- *Defense Information Infrastructure (DII) Common Operating Environment (COE) Version 3.0/B Application Programmer Interface (API) Reference Guide (IRIX 6.2)*, DII.30B.IRIX62.RG-1, Inter-National Research Institute (INRI), May 8, 1997
- *Defense Information Infrastructure (DII) Common Operating Environment (COE) Version 3.0/B Developer's Toolkit Installation Guide (IRIX 6.2)*, **DII.30B.IRIX62.DTK.IG-1**, Inter-National Research Institute (INRI), May 8, 1997.

3. Version Description

3.1 Inventory of Materials Released

- Magnetic media: Two 4mm DATs consisting of a relative tar of the Developer's Toolkit, Version 3.0/B (IRIX 6.2).
- Soft-copy Documentation: One 3.5" floppy diskette (WordPerfect 6.0 for Windows format) containing the *Defense Information Infrastructure (DII) Common Operating Environment (COE) Version 3.0/B Version Description Document for the Developer's Toolkit (IRIX 6.2)*, Document Control No. DII.30B.IRIX62.DTK.VDD-1, May 8, 1997.
- Hard-copy Documentation: Two hard copies of the aforementioned VDD.

3.2 Software Changes

This delivery contains no software changes.

4. Installation Instructions

Reference the *DII COE Developer's Toolkit Installation Guide (IRIX 6.2)* for instructions on installing the developer's tools.

5. Known Problems and Errors

Reference the following table for a list of known problems and errors with the DII COE Version 3.0/B Developer's Toolkit (IRIX 6.2).

DII COE Version 3.0/B Developer's Toolkit (IRIX 6.2) Known Problems and Errors	
Total Open Known Problems and Errors: [3]	
INRI Number:	RTO00001568
Agency Number:	None.
Short Description:	During a diff of the FileAttribs file against the control file, it was determined that the Group Id was set to 995.
Long Description:	During a diff of the FileAttribs file against the control file, it was determined that the Group Id was set to 995 (the control file's Group Id is 1).
INRI Number:	RTO00001581
Agency Number:	None.
Short Description:	VerifySeg -f (display Descriptors) does not print the descriptor names on Segments (i.e., VerifySeg /h/AcctGrps SysAdm).
Long Description:	VerifySeg -f (display Descriptors) does not print the descriptor names on Segments (i.e., VerifySeg /h/AcctGrps SysAdm).
INRI Number:	RTO00001582
Agency Number:	None.
Short Description:	"MakeInstall-t" by itself core dumps.
Long Description:	MakeInstall-t" by itself core dumps. Help should be displayed; however, this problem has no adverse effect on the system.

6. Release Notes

General

1. The user must log in as `root` to install the Developer's Toolkit tape. By doing this, the user will ensure that the tools have the correct permissions and ownerships to simplify use.
2. The tools do not support the `?` command line parameter for help. Help can be displayed for all tools by using the `-h` or `-H` command line parameters.
3. If the `add`, `append`, or `delete` keywords are used in the community `SegDescrip` entry, the brackets "`{}`" that mark the beginning and end of the text must be the first characters on a new line.
4. The `MakeTOOLSEnv` script must be run in the `DII_DEV/Scripts` directory to set the `TOOLS_HOME`, `MACHINE`, `MACHINE_OS`, and `CPU` environment variables. This script should be run before running any of the developer's tools. If this script is not run, errors may occur.

MakeInstall Tool

1. `MakeInstall` supports multi-volume tapes but will not divide segments across tapes.
2. `MakeInstall` does not support variants.
3. `MakeInstall` does not allow segments and their descriptors to be checked out from the repository.
4. `MakeInstall` does not support the `-ot {files}` command line option.
5. The `TOOLS_DATA` environment variable must be set to the developer's tools data directory in order to display the device table.
6. In order to not compress a segment, the `$NOCOMPRESS` option must be specified in the `Direct` descriptor in the `SegInfo` file. `MakeInstall` no longer prompts the user with a compress option; instead, the tool automatically references the `SegDescrip` entry.

TestInstall Tool

1. The `AcctGrp` descriptor only supports one entry. If multiple entries exist, only the first account group is created.
2. The `Hardware` descriptor does not support "PC" or "Pentium" in the `$CPU` field and does not support "NT" or "SCO" in the `$OPSYS` field. These keywords are supported but are invalid on UNIX platforms.
3. Network Information Service (NIS) and Domain Name Service (DNS) servers are not updated when processing the `Network` descriptor.
4. The `$NETMASK` keyword in the `Network` descriptor is not processed.
5. The `$HOME_DIR` keyword in the `Requires` descriptor is not processed.

TestRemove Tool

1. `TestRemove` does not remove services, groups, or password file entries and does not perform an unmount.

TimeStamp Tool

1. If a valid version line in the version file cannot be identified and no command line parameters are given, the `TimeStamp` tool will return an error.

VerifySeg Tool

1. `VerifySeg` does not check the syntax of version numbers listed in the `Compat Segment Descriptor` file.
2. `VerifySeg` performs keyword parsing (searches for keywords and their associated fields) but does not perform validity (bounds or data field) checking in the `Conflicts` or `VERSION` descriptor file.
3. `VerifySeg` does not perform checking in the `FilesList Segment Descriptor` file.
4. `VerifySeg` performs validity checking (bounds or data field) on keywords but not on data associated with keywords (e.g., disk size in the `Hardware Segment Descriptor` file).
5. `VerifySeg` does not check keyword combination or keyword and segment type constraints in the `Hardware Segment Descriptor` file.

VerUpdate Tool

1. If a valid version line in the version file cannot be identified and no command line parameters are given, the VerUpdate tool will return an error.

Public APIs

Reference *DII COE Programming Guide (IRIX 6.2)* and the *DII COE API Reference Guide (IRIX 6.2)* for information on public APIs.

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